Standard Indicator Evaluation Matrix

Roswell Field Office

Indicator	Degree of Departure from the Ecological Site Description and/or Ecological Reference Area(s)				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
1. Rills – slope/soil dependent	Rill formation is severe and well defined throughout most of the area.	Rill formation is moderately active and well defined throughout most of the area.	Active rill formation is slight at infrequent intervals, mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	Current or past formation of rills as expected for the site.
2. Water Flow Patterns (evidenced by litter, gravel or soil redistribution or pedestalling)	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Erosion is minor with some instability and deposition.	Nearly matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short.	Matches what is expected for the site; minimal evidence of past or current soil deposition or erosion.
3. Pedestals and/or Terracettets (**Pedestals**-plants or rocks elevated as a result of losing soil by wind or water erosion. **Terracettes**-benches of soil deposition caused by water (not wind)).	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled; exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and a interspaces and/or exposed slopes. Occasional terracets present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation, especially in water flow patterns and/or on exposed slope.	Current or past evidence of pedestalled plants or rocks as expected for the site. Terracettes absent or uncommon.
4. Bare Ground (amount (patch size) and distribution) **See ESD & Monitoring data for baseline** *Cover Worksheet	Percent bare ground substantially exceeds the upper range of the ESD. (i.e., Loamy SD-3 bare ground >70%)	Percent bare ground exceeds the upper expected range of the ESD. (i.e., Loamy SD-3 bare ground exceeds 50%)	Percent bare ground approaches the upper end of the range expected for the ESD. (i.e., Loamy SD-3 bare ground approaches 50%)	Percent bare ground falls within the expected range of the ESD. (i.e., Loamy SD-3 bare ground ranges from 40-50%)	Percent bare ground is less than that expected for the ESD. (i.e., Loamy SD-3 bare ground is <40%)
5. Gullies (numbers, severity, incised sides, active headcuts)	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent.	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts may be present.	Uncommon with vegetation stabilizing the bed and slopes; no signs of active headcuts, nickpoints or bed erosion.	Drainages are represented as natural, stable channels; no signs of erosion with vegetation common.
6. Wind-Scoured, Blowouts and/or Deposition Areas (absence of soil crusts)	Extensive.	Common.	Occasionally present.	Infrequent and few.	Matches what is expected for the site.
7. Litter Movement (wind or water) (size of litter and distance it is moved from its origin)	Litter concentrated around obstructions. Most litter has been displaced.	Litter loosely concentrated near obstructions. Litter has been displaced.	Litter in scattered concentrations around obstructions and in depressions.	Litter being displaced.	Matches that expected for the site with a fairly uniform distribution of litter.

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9. Soil Surface Loss or Degradation (Organic matter content (color) and structure of the surface layer)	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded than, that in the subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Soil loss or degradation in interspaces with degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is reduced.	Soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	Soil surface horizon intact. Soil structure and organic matter content match that expected for the site.
10. Plant Community Composition and Distribution Relative to Infiltration and Runoff. (plant rooting patterns, litter production, basal area, and spatial distribution, i.e.conversion of grassland to shrubland reduces infiltration and increases runoff)	Adverse plant cover changes have occurred. Infiltration is severely decreased due to adverse changes in plant community composition and/or distribution.	Detrimental plant cover changes have occurred. Infiltration is greatly reduced due to adverse changes in plant community composition and/or distribution.	Plant cover changes negatively affect infiltration. Infiltration is reduced due to adverse changes in plant community composition and/or distribution.	Plant cover changes have only a minor effect on infiltration. Infiltration is affected by minor changes in plant community composition and/or distribution.	Plant cover (distribution and amount) adequate for site protection. Infiltration and runoff are equal to that expected for the site.
11. Compaction Layer (below surface) (physical features include platy or blocky dense soil structure over less dense soil layers, horizontal root growth	Compaction beneath over 30% of surface; severely restricts water movement and root penetration.	Compaction beneath 20-30% of surface; restricts water movement and root penetration.	Compaction beneath up to 10-20% of surface; moderately restricts water movement and root penetration.	Compaction beneath up to 5-10% of surface; weakly restricts water movement and root penetration.	Compaction covers 0-5% of the surface; not restrictive to water movement and root penetration.
12. Functional/ Structural Groups (F/S Groups) (dominance based on relative weight or relative cover – composition by weight recommended: Dominant (41-100% comp. Subdominant (11-40%) Minor dominant (3-10%) Trace component (<3%)) See Ecological Site Description *F/S Groups Worksheet	Number of F/S Groups greatly reduced; and/or relative dominance of F/S groups has been dramatically altered; and/or number of species within F/S groups dramatically reduced.	Number of F/S Groups reduced; and/or one dominant group and/or one or more subdominant groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups significantly reduced.	Number of F/S Groups reduced; and/or one or more subdominant groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups moderately reduced.	Number of F/S Groups reduced; and/or relative dominance of F/S groups has been modified from that expected for the site; and/or number of species within F/S groups slightly reduced.	F/S groups and number of species in each group closely match that expected for the site.

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13. Plant Mortality & Decadence(Native plants only; Standing dead vegetation from Cover Worksheet Compared to ESDs.) *Cover Worksheet	Greater than 50% of vegetation present is dead and/or decadent.	40-50% of vegetation present is dead and/or decadent.	30-40% of vegetation present is dead and/or decadent.	20-30% of vegetation present is dead and/or decadent.	Less than 20% of vegetation present is dead and/or decadent.
14. Litter Amount (dead plant material in contact with soil surface; amount expected for ERA or PNC under the same type of growing conditions) See ESD and Monitoring Data	No litter present	Percent litter falls below the bottom end of the range expected for the ESD.	Percent litter present falls in the bottom end of the range expected for the ESD	Percent litter falls within the expected range of the ESD	Amount of litter equals or exceeds what is expected for ESD.* *RFO has few problems with litter accumulation from annual plants.
15. Annual Production (Departure of total above ground biomass values from that expected for the site due to factors **not** related to landscape position, weather, regional location or different soils?)	Less than 20% of potential production.	20 – 40% of potential production.	40 – 60% of potential production.	60 – 80% of potential production.	Exceeds 80% of potential production.
16. Invasive Plants (invaders or increases that can and often do continue to increase regardless of management)	Dominate the site.	Common throughout the site.	Scattered throughout the site.	Present primarily on disturbed sites.	Rarely present on site.
17. Reproductive Capability of Perennial Plants (native and seeded) **(Is anything other climate restricting a plants capability to reproduce?)**	Capability to produce seed or vegetative tillers is severely reduced	Capability to produce seed or vegetative tillers is reduced	Capability to produce seed or vegetative tillers is limited.	Capability to produce seed or vegetative tillers is only slightly limited	Capability to produce seed or vegetative tillers is not limited
18. Physical/Chemical/ Biological Crusts Soil dependent	Found only in protected areas, very limited suite of functional groups.	Largely absent, occurring mostly in protected areas.	In protected areas and with a minor component in interspaces.	Evident throughout the site but continuity is broken.	Largely intact and nearly matches site capabilities.

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19. Wildlife habitat	A majority of species' habitat is in less than satisfactory condition (less than or equal to 20% in satisfactory condition)	Greater than half the species' habitat is in less than satifactory condition. (21-40% in satisfactory condition)	A portion of the habitat is less than satisfactory condition. (41-60% in satisfactory condition)	A slight amount of habitat is in less than satisfactory condition. (61-80% in satisfactory condition)	Habitat for wildlife is in satisfactory condition. (greater than 80% in satisfactory condition)
20. Wildlife Populations	Populations are declining or not present and recovery potential is severely limited.	Populations are declining or not present, recovery potential exists.	Populations are present, not at potential levels and are static.	Populations are present, not at potential levels, but are recovering	Populations are present and secure or suitable habitat exists but species isn't present due to unknown factors.
21. Special Status Species Habitat	A majority of Special Status Species' habitat is in less than satisfactory condition. (less than or equal to 20% in satisfactory condition)	Greater than half of the Special Status Species' habitat is in less than satisfactory condition. (21-40% in satisfactory condition)	A moderate amount of the Special Status Species' habitat is in less than satisfactory condition. (41-60% in satisfactory condition)	A slight amount of the Special Status Species' habitat is in less than satisfactory condition. (61-80 in satisfactory condition)	Habitat for Special Status species is in satisfactory condition. (greater than 80% in satisfactory condition)
22. Special Status Species Populations	Populations of Special Status Species are declining or not present and recovery potential is severely limited.	Populations of Special Status Species are declining or not present, recovery potential exists	Populations of Special Status Species are present, not at potential levels and are static.	Populations of Special Status Species are present, not at potential levels, but are recovering	Populations of Special Status Species are present and secure or suitable habitat exists but species isn't present due to unknown factors.